

Peer Review: Why You Need It; How You Get It

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RESOLVE

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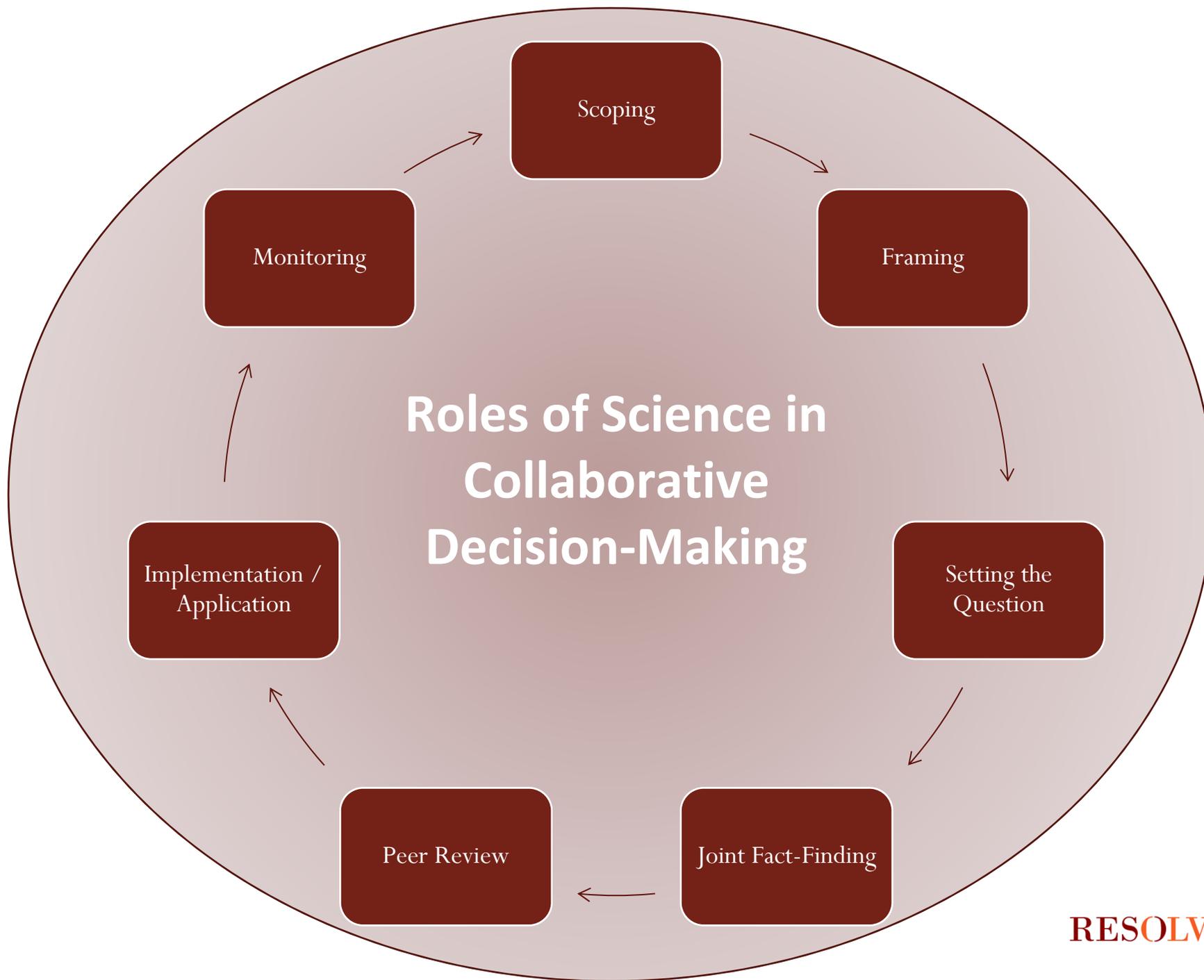
Collaborative Science

The nexus of policy, science, and the public

Collaborative Science

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- Policy- and decision-making often requires complex scientific and technical knowledge. This knowledge may not always be known, agreed upon, readily accessible, or understandable to decision makers and stakeholders.
- Collaborative science is science that informs and supports multi-party decision-making.
- Collaborative science can be used to develop, find, verify, and communicate the best available science to policy decision makers and the public.



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Peer Review

OMB Definition

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“Peer review is one of the important procedures used to ensure that the quality of published information meets the standards of the scientific and technical community. It is a form of deliberation involving an exchange of judgments about the appropriateness of methods and the strength of the author’s inferences. Peer review involves the review of a draft product for quality by specialists in the field who were not involved in producing the draft.”

FWS and NMFS Definition

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“Formal solicitations of expert opinions and analyses on one or more specific questions or assumptions. This solicitation process may take place during a public comment period on any proposed rule or draft recovery plan, during the status review of a species under active consideration for listing, or at any other time deemed necessary to clarify a scientific question.”

Peer Review Policies

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- OMB Final Information Quality Bulletin for Peer Review (2004) lays out minimum requirements agencies must follow for peer reviews.
- OMB Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies (2002) notes the importance of transparency, independence, and balance in conducting peer reviews, and lays out guidelines for selecting reviewers.

Peer Review Policies

- FWS Information Quality Guidelines and Peer Review (2012) provides guidance on ensuring the quality, objectivity, utility, and integrity of information disseminated by FWS.
- FWS Scientific Integrity and Scholarly Conduct Policy (2011) includes the Service's policy on employees and contractors participating in peer review or on having their own work peer reviewed.
- FWS/NMFS Interagency Policy for Peer Review in ESA Activities (1994) clarifies the use of peer review in ESA activities.

DOI Scientific Integrity Manual (2011)

- Lays out guidelines for scientists and scholars having their work peer reviewed or participating in a peer review.
 - “I will welcome constructive criticism of my scientific and scholarly activities and will be responsive to their peer review.”
 - “I will provide constructive, objective, and professionally valid peer review of the work of others, free of any personal or professional jealousy, competition, non-scientific disagreement, or conflict of interest. I will substantiate comments that I make with the same care with which I report my own work.”

Scientific Requirements

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- ESA and other laws require the use of “best available science” in regulatory action
- Data Quality Act requires scientific review if the impact of an action is estimated to be greater than \$50 million (a “significant action”)

Other Considerations

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- Public opinion
 - ▣ The public is increasingly demanding peer reviewed science to be the basis of policy decision-making.
- Judicial review
 - ▣ Peer review provides protection against the charge of “arbitrary and capricious” actions undertaken without complete scientific review or understanding.

Technical Information Needed In...

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- Species' status review
- Environmental Impact Statements/Assessments
- Management Plans (e.g., refuges)
- Regulatory decision-making
- Monitoring schemes

If Done Right, Peer Review Can...

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- Provide an impartial evaluation of the strengths and weaknesses of the science being considered
- Evaluate competing scientific positions
- Identify flaws in the science
- Support the development of scientific documents
- Provide a clear administrative record of how science is evaluated

If Done Right, Peer Review Can...

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- ❑ Ensure decision makers are provided the best available science
- ❑ Investigate allegations of scientific misconduct
- ❑ Strengthen the confidence decision-makers and the public have in the science used to make a decision
- ❑ Support agency decisions, and are resistant to challenge

Questions to Consider

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- When does FWS need peer review?
- When is peer review legally required?
- When is peer review a good idea?
 - ▣ Transparency
 - ▣ Establish a scientific record

Questions to Consider

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- How should a peer review be managed?
 - Internally vs. externally
 - How to find reviewers?
 - Setting the scope of the peer review
 - Reasonable expectations

Internal

External

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- Done by parties within the agency
- Possible perception of bias
- Lower cost
- No contracting requirements/paperwork

- Done by an outside entity (e.g., a university, wildlife society, contractor, specialist, or NAS)
- Greater appearance of neutrality
- Greater cost if cannot be done for free
- Outside contracts

Managing the Process

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- *A neutral* peer review
- Clear *scope* of the peer review
 - ▣ Reviewers should only comment on the science, not policy
- Equal access to *information*
- *Transparent* process
- Establishing the *administrative record*

Process Checklist

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- ❑ Make decisions on timeline and acquire funding
- ❑ Determine when the review will take place
- ❑ Decide how will the peer review comments be used (is there commitment to use the results?)
- ❑ Clearly state what the review will/will not address
- ❑ Specifically state review criteria and goals
- ❑ How will the review be managed, and what form/type of review is appropriate?

Process Checklist (con't)

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- Decide who will manage the review
 - ▣ Outside help: Select contractor using existing policy and management guidelines
 - ▣ Internal
- Select the reviewers
 - ▣ Inform reviewers of expectations, what/when the review is coming, and due date
- Manage the review
 - ▣ Guidance letter, maintain contact with reviewers
- Collate results
- Reconcile the reviewer comments

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Finding the Right Reviewers

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- ❑ Do they hold the right *expertise*?
- ❑ Is *diversity* (geographical, discipline, demographics) a consideration?
- ❑ Is there the right *balance*?
- ❑ Is there an adequate *number* of reviewers?
- ❑ Do they have the right *experience*?
 - ❑ Technical and awareness of agency needs
- ❑ Are the reviewers free of *conflict of interest*?
 - ❑ [NAS Conflict of Interest Policy](#)

Peer Review Case Study 1

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Nominated reviewers consist solely of stakeholders or individuals already known to support the agency's decision.	Reviewers have known conflicts of interest, and the panel is not balanced.
Scope: Reviewers are asked to determine if species X should be delisted.	Reviewers are asked to opine on a matter of policy.
One reviewer is privy to information the other reviewers do not have.	The reviewers have unequal access to information.
A meeting is convened with a review panel where information is presented from only one stakeholder interest.	Reviewers are not given access to balanced information.
No record is kept of this meeting.	The process is not transparent, and there is an incomplete administrative record.
Reviewers express opinions on management and policy.	Agency prerogative encroached upon.
Reviewers discuss their reviews with interested parties.	Public relations problems.
Reviewers state there is insufficient information to make a decision.	Inapplicable standard.
Reviewers state the science used is not "good enough."	Inapplicable standard

Peer Review Case Study 2

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Nominated reviewers were chosen from a wide net and vetted.	No known conflicts of interest.
Scope: Reviewers are asked if adequate and the best available science were used in the agency's determination to delist species X.	Reviewers are asked to provide comments on science only.
Reviewers all receive the same background information, and if one finds new information shares with the rest of the panel.	The reviewers have equal access to information.
A meeting is convened with the review panel where information is presented from all interest groups.	Reviewers are given access to balanced information.
A summary of the meeting is prepared.	Transparency is assured, and an administrative record is kept.
Reviewers only comment on scientific matters, and do not offer opinions on management or policy.	
Reviewers referred all inquiries from interested parties to the peer review manager.	Managing public relations and controlling information until the peer review is completed.
Reviewers unanimously opine the scientific basis of the decision is complete and well justified.	

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Reconciling Reviewer Comments

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- Unanimous opinion among the reviewers that that scientific basis of the document is complete and well justified
- Unanimous opinion among the reviewers which point out minor omissions or mistakes
- Unanimous opinion among reviewers showing substantial errors or omission
- Disagreement among reviewers
- Inappropriate comments by reviewers

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The RESOLVE Approach

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RESOLVE:

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- Is a third-party neutral
- Manages the entire peer review process
- Maintains a complete administrative record
- Is careful to maintain the neutrality of the peer review
- Has a network of scientists, researchers, and technical experts who can be called on to serve on review panels

Selected Projects

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- Peer Review of the Science Used in the NPS's Draft EIS Drakes Bay Oyster Company Special Use Permit (2012)
- Science Review of the Testimony in the Delta Smelt Cases (2011)
- Wyoming Gray Wolf Peer Review (2011)
- Science Review of the USFS Draft EIS for National Forest System Land Management (2011)
- Scientific Review of the Draft Northern Spotted Owl Recovery Plan and Reviewer Comments (2008)
- Evaluation of the scientific information regarding Preble's Meadow Jumping Mouse (2006)
- Scientific evaluation of the status of the Northern Spotted Owl (2004)

USFS DEIS

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- ❑ Completed a scientific peer review of the USFS draft EIS for National Forest System Land Management.
- ❑ Convened 7 reviewers from different disciplines and geographic locations who were considered experts in their field.
- ❑ Reviewers were asked three questions regarding scientific caliber, treatment of uncertainty, and comprehensiveness of the document.
- ❑ Reviewers worked independently and were not in contact with one another.
- ❑ USFS provided comments and questions on the reviews to the reviewers via RESOLVE.
- ❑ Entire peer review completed in three months.

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Columbia River Channel Deepening

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Peer Review IDIQ

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- ❑ USFWS (and all DOI agencies) have access to external scientific support and peer review services under an IDIQ contract.
- ❑ Three prime contractors: AMEC, Atkins, EMPSi
- ❑ Teaming partners: ABR, Geo-Marine, RESOLVE, Parametrix, and SWCA
- ❑ More information:
http://www.fws.gov/informationquality/peer_review/index.html

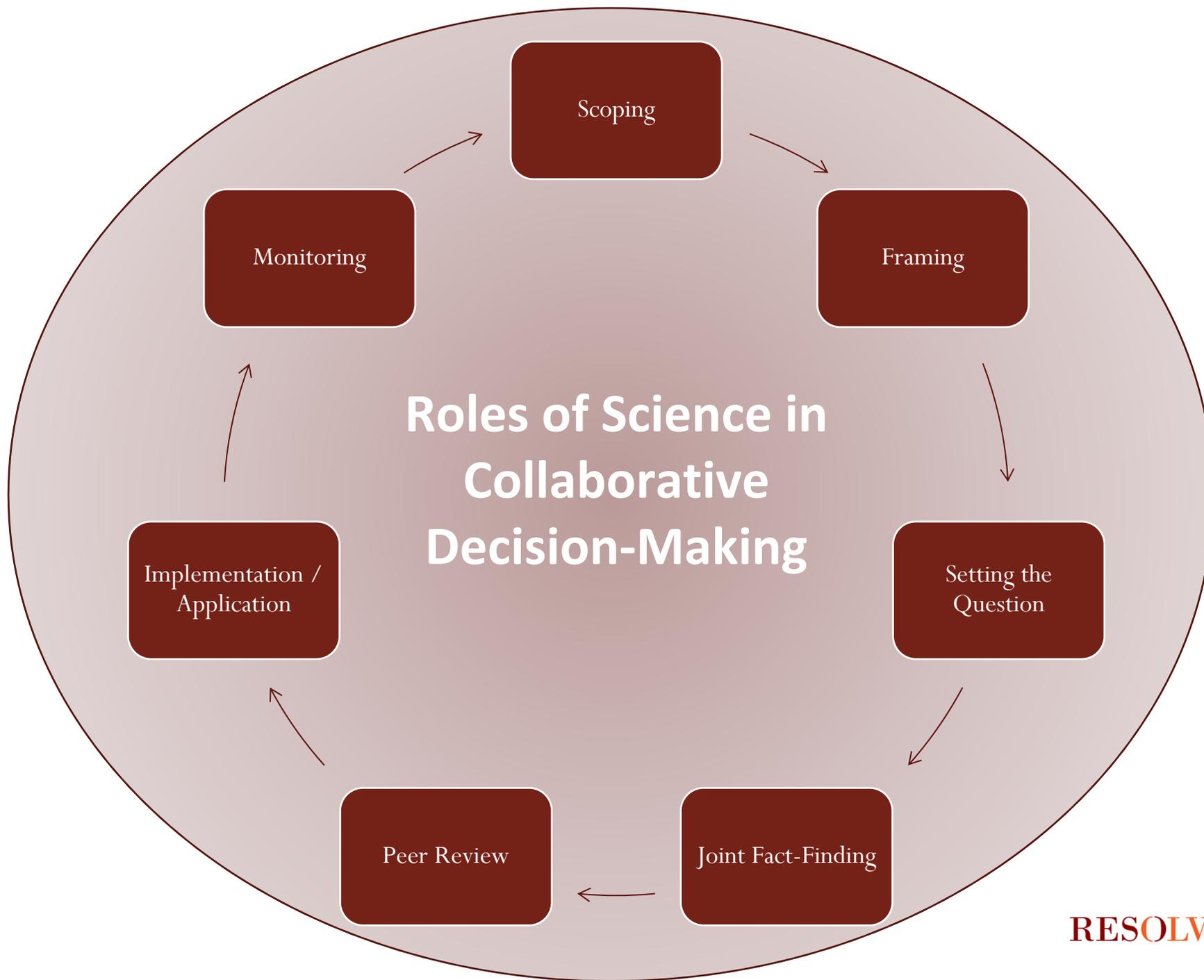
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Peer Review and Collaborative Science

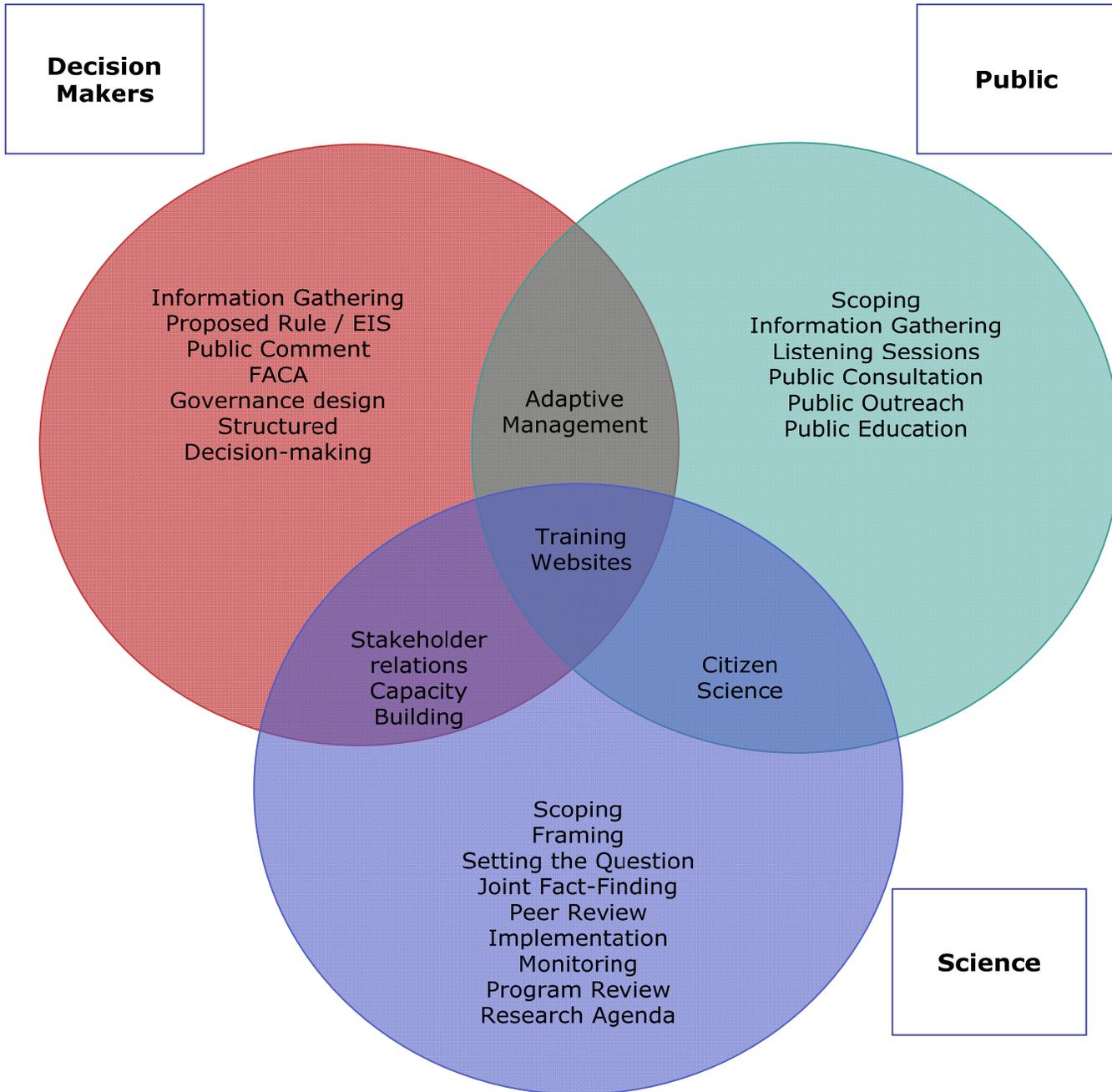
Peer Review and Collaborative Science

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- ***Peer review is not a silver bullet.***
- Peer review will not solve conflicts stemming from value differences.
- Peer review is just one aspect of collaborative science. It is a tool in policy decision-making, but not the only tool.
- Using peer review wisely can ease difficulties in using technical and scientific information to inform policy, but there are other collaborative science tools which can and should be employed as well throughout the policy-making process.
- If there is no commitment or adequate time or resources for a thorough peer review ***don't do one.***



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